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Reconstructing the minimal self, or how to make sense of agency and ownership

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Abstract We challenge Gallagher’s distinction between the sense of ownership (SO) and the sense of agency (SA) as two separable modalities of experience of the minimal self and argue that a careful investigation of the examples provided to promote this distinction in fact reveals that SO and SA are intimately related and modulate each other. We propose a way to differentiate between the various notions of SO and SA that are currently used interchangeably in the debate, and suggest a more gradual reading of the two that allows for various blends of SO and SA. Such an approach not only provides us with a richer phenomenology but also with a more parsimonious view of the minimal self.

Keywords Agency · Ownership · Minimal self · Thought insertion

Introduction

Our starting point is Gallagher’s notion of a “minimal self,” which is based on the intuition that there is a basic, immediate, and primitive “something” that we are willing to call a self “even if all of the unessential features of self are stripped away” (Gallagher 2000a, p. 15). With respect to this minimal self, Gallagher argues that it is possible to identify two separable modalities of experience: (1) a sense of ownership or the sense that I am the one who is undergoing an experience and (2) a sense of agency or the sense that I am the one who is the initiator or source of the action.¹

¹These are the only modalities or aspects of the minimal self that are mentioned throughout the literature. It is however not explicitly stated that they together *constitute* the minimal self.

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In normal voluntary or willed action, the sense of ownership (SO) and the sense of agency (SA) are intimately intertwined and often indistinguishable. However, Gallagher argues that there are a number of situations in which it becomes possible to distinguish between them, namely in cases of involuntary movements, unbidden thoughts, and schizophrenic experiences such as thought insertion. In these cases, according to Gallagher, the sense of agency is lacking but the sense of ownership is retained in some form.

The main aim of this article is to challenge Gallagher's distinction between the sense of ownership and the sense of agency as two separable modalities of experience. We will investigate to which extent the phenomena cited by Gallagher in favor of such a distinction in fact do support it. As we will show, a closer examination of involuntary movements, unbidden thoughts, and thought insertion reveals that the distinction between the sense of ownership and the sense of agency is not as clear cut and unambiguous as Gallagher proposes. Even here, agency is not completely absent. Our discussion rather suggests that the SO and the SA remain intimately related and that distortions of the latter affect the former as well. Reflexes seem to be the only cases that support the idea that one can have the experience of a sense of ownership without any sense of agency. However, we will argue that what is left of SO in these cases is only a very weak sense of ownership that has to be carefully distinguished from other stronger interpretations.

This brings us to the second aim of our article, which is to clarify and elaborate on the various notions of ownership and agency that can be found in Gallagher's work but are often used interchangeably. Besides a tendency to conflate *stronger and weaker* interpretations of ownership and agency, there is also a frequent mix-up of the *levels of description*. Furthermore, different *references* of the sense of ownership get confused as well.

Highlighting these different understandings of the notion of ownership allows us to articulate a richer and more subtle conception of the minimal self—one in which the distinction between ownership and agency cannot be drawn so easily. Instead of a categorical distinction between SO and SA, we propose a gradual reading that allows us to interpret experiences in accordance with the different blends of agency and ownership involved. We believe that this actually helps to improve Gallagher's own position, since it seems to fit his more general approach to agency and ownership very well.

Different ways to make sense of agency and ownership

Gallagher's work offers a number of different ways to make sense of agency and ownership. In this section, we discuss some distinctions between and within the notions of agency and ownership that set the stage for the main argument of this article.

Gallagher proposes his distinction between the sense of ownership and the sense of agency at the level of *experience* as an alternative to a higher-order distinction made by Graham and Stephens (1994a) at the level of *attribution*.² According to

² See also Synofzik et al. (2008), who argue for a distinction between a feeling of ownership and a judgment of ownership. Moreover, these authors also talk about a meta-representation of ownership, which is relevant when one wants to extend the notion of ownership so as to include objects which are not proper parts of my body but are mine in the sense of belongings.

Graham and Stephens, ownership and agency should be primarily thought of as attributions on the basis of a reflective acknowledgment. They distinguish between the attribution of ownership; the reflective ascription of a certain action to myself, and an attribution of agency; the reflective ascription that I am the cause or author of a certain action.

Graham and Stephens also speak of a sense of agency, but they regard the subject's sense of agency to depend on whether the subject succeeds in attributing a specific action or thought to himself.³ That in turn depends upon whether the subject can fit this action or thought in the picture he has of himself. "The subject unproblematically accepts a thought as her action if, by her own lights, it accords with her intentional psychology—if roughly, it is the sort of thought she would expect herself to think given her picture of herself" (Graham and Stephens 1994b, p. 103). They thereby follow Dennett's (1987, 1991) and Flanagan's (1991, 1992) account of self-referential narratives. A successful attribution *generates* the sense of agency, the sense that it was in fact me who did or thought this.

In contrast, Gallagher takes the sense of ownership and the sense of agency to be first-order, phenomenological (nonconceptual) aspects of experience, prereflectively implicit in action (Gallagher 2007b, c), and suggests that the higher-order conceptually informed attributions of ownership and agency depend on these first-order experiences. Thus, whereas Gallagher argues that attributions reflect the senses that underlie them, Graham and Stephens maintain that it is the other way around: the sense only occurs as a result of the attribution. They take the opposite stance on the issue of primacy.

We agree with Gallagher that such a "radical top-down" account is not the right starting point and welcome his alternative bottom-up explanation starting from first-order phenomenology. However, we would like to stress that the dependence of higher-order attributions of ownership and agency on first-order experiences does not necessarily imply that there is a one-to-one mapping between the two levels. In order to establish that, it first needs to be shown that the prereflective experience of agency can in fact be distinguished from the prereflective sense of ownership.

Having explained the difference between the sense of agency and ownership at the level of experience and the reflective ascription of agency and ownership at the level of attribution, let us now proceed by briefly elaborating on how Gallagher understands these notions. Gallagher formulates a number of slightly different versions of what counts as a sense of ownership. For example, he defines it as "the sense that I am the one who is undergoing an experience" (Gallagher 2000a, b), as "the sense that it is I who am experiencing the movement or thought" (Gallagher 2005, p. 173), and as "the pre-reflective experience or sense that I am the subject of the movement (e.g. a kinesthetic experience of movement)" (Gallagher 2007b, p. 2).

SO can be further explicated in terms of *mineness*, an experiential feature of the minimal self that allegedly stays constant throughout all experience and does not depend on something apart from the experience itself. We read that "if the experience is given in a first-personal mode of presentation for me, it is experienced

³ Graham and Stephens (1994a, p. 92; 1994b, p. 2) in fact make a distinction between attributions of *subjectivity* and attributions of agency. We use the labels "attribution of ownership" and "attribution of agency" for terminological reasons.

as my experience, otherwise not (...) the self is conceived as the invariant dimension of first-personal givenness in the multitude of changing experiences” (Gallagher and Zahavi 2008, p. 204). According to Gallagher, the experience of mineness is an essential element of the minimal self, since it is the most primitive form of experience that is necessarily self-conscious. “The minimal (or core) self possesses experiential reality, and is in fact identified with the first-person appearance of the experiential phenomena” (Gallagher and Zahavi 2008, p. 204).

SO can also be explicated in terms of *proprioception*. Gallagher has argued that SO involves a kind of proprioceptive awareness: “a frame of reference that applies to the lived body as perceiver and actor” (Gallagher and Zahavi 2008, p. 142). SO as proprioceptive awareness is, as O’Shaughnessy (1995, p. 175) calls it, “attentively recessive” in the sense that it provides an awareness of the body that is tacit or implicit in the body’s motor performance and results from proprioceptive feedback that functions as an integral part of the continuous movement.

With respect to the sense of agency, things are a bit more complicated. Initially, Gallagher (2000a, b) defined the sense of agency as “the sense that I am the one who is the initiator or source of the action”. However, in his later work, he concludes (after considering a number of scientific experiments dealing with SA) that the sense of agency at the first-order level of experience is “complex because it is the product of several contributory elements: efferent signals, sensory (afferent) feedback, and intentional feedback, which is perceptual in nature. If any of these contributory elements fail, or fail to be properly integrated, then we can get a disruption in the sense of agency” (Gallagher and Zahavi 2008, p. 166). This leads him to distinguish between SA as first-order experience linked to bodily movement (Farrer et al. 2003; Gallagher 2000a, b; Tsakiris and Haggard 2005), call this “SA^m,” and SA as first-order experience linked to the intentional aspect of an action, a task, goal, etc. (Chaminade and Decety 2002; Farrer and Frith 2002), call this “SAⁱ.”

But what about the higher-order distinction between ownership and agency at the level of attribution? Although Gallagher is critical of Graham and Stephens’ account of the higher-order attribution of agency, especially with regard to claims about its alleged primacy, he does admit that this kind of attribution has its place in phenomenological reality. Thus, besides the different senses of agency at the level of experience (SA^m and SAⁱ), he also identifies the attribution of agency or “AA” (Graham and Stephens 1994a, 2000; see also Gallagher and Zahavi 2008, p. 166). Although Gallagher is actually not explicit about this, it seems reasonable to assume that his line of thought implies that we might also allow for the attribution of ownership—“AO.” Table 1 provides an overview of these distinctions of agency and ownership.

This overview allows us to raise all kinds of questions. For example, we might ask whether it is indeed possible to make such a neat distinction between SA^m and SAⁱ. Although merely raising your hand is not a very challenging task, nonetheless, it does seem to involve an intentional aspect. We could also wonder how we should conceive of the relation between the level of sense and attribution. In what follows, however, our primary focus is on how to understand ownership and agency on the level of experience.

We will explore Gallagher’s distinction between the sense of agency and the sense of ownership through the investigation of the cases that Gallagher himself appeals to in order to establish this distinction: involuntary movements, unbidden thoughts, and

Table 1 Ownership and agency: an overview

	Agency	Ownership
Sense	SA: “the pre-reflective experience or sense that I am the author of the action (e.g. the experience that I am in control of my action)” (Gallagher and Zahavi 2008, p. 161)	SO: “the pre-reflective experience or sense that I am the subject of the movement (e.g. the kinesthetic experience of movement)” (Gallagher and Zahavi 2008, p. 161)
	SA ^m as first-order experience linked to bodily movement (Gallagher and Zahavi 2008, p. 166)	SO as the proprioceptive awareness of bodily movement (Gallagher 2003)
	SA ⁱ as first-order experience linked to the intentional aspect of a task, goal, etc. (Gallagher and Zahavi 2008, p. 166).	SO as “mineness,” the first-person appearance of experience (Gallagher and Zahavi 2008, p. 204)
Attribution	AA as second-order, reflective attribution of agency (Graham and Stephens 1994b, 2000)	AO as second-order, reflective attribution of ownership (Graham and Stephens 1994a, 2000)

schizophrenic thought insertion. Although we agree with Gallagher that some of these phenomena allow us to disentangle the sense of agency and the sense of ownership, the question is *to which extent* this is possible. Moreover, we think that Gallagher is not very clear about how to interpret the sense of ownership that remains intact in these cases. We will argue that this can only be a very weak sense of ownership, which should be distinguished from a stronger sense of ownership. We propose a more gradual reading of SO and SA and support this idea by appealing to other phenomena as well, both “normal” (such as reflexes and sensations) and “abnormal” (such as the Anarchic Hand Syndrome), and discuss a number of relevant experiments that have dealt with the SO/SA distinction.

Involuntary movements, sensations, and reflexes

Involuntary movements

One of the simplest examples to distinguish sense of agency from sense of ownership is the case of involuntary movement. Therefore, it is not surprising that it figures prominently in Gallagher’s writings on agency and ownership. The general line of argument is as follows: someone pushes me from behind and I sense that it is my body that is moving. I thus have a sense of ownership. However, since I did not cause the movement, I do not have a sense of agency. Conclusion: involuntary movement supports a distinction between SA and SO.

Although this reasoning seems to be rather straightforward, a closer look reveals some difficulties. First of all, it is not clear that my sense of agency has indeed disappeared. There is definitely an outside force that works on my body, but already in my falling, or regaining balance, or in turning while falling, I am actively reacting to this push. This reaction might already be considered agentic and provides me with a sense of agency. One could even say that these kinds of situations actually *reinforce* rather than rob me of my sense of agency. When I am riding my bicycle and a sudden gust of wind throws me out of balance and forces me to shift my

weight, I do not experience a loss of agency, but I in fact start to fully experience my agency at that very moment because of my ability to react effectively. The influence of an outside force alone is thus not sufficient to compromise my sense of agency. On the contrary, to battle with the forces of nature (e.g. when sailing, swimming, or climbing) is exciting exactly because we feel more capable and alive when doing so. It is precisely in those situations that we experience ourselves as active agents and have a strong sense of agency.

One might object that the SA we experience in the above examples only applies to our *reaction* and not to the initial movement of our body itself, which is caused by an outside force. In this way, it could still be claimed that I experience only SO for the movement and SO plus SA for the reaction that follows. However, it is important to note that such an arrangement depends on an artificial division between stimulus and response. Dewey already argued that this behavioristic stimulus–response model is a legacy of a Cartesian split between body and mind. In his famous discussion about the reflex arc, he remarked that “instead of interpreting the character of sensation, idea and action from their place and function in the sensory-motor circuit, we still incline to interpret the latter from our preconceived and preformulated ideas of rigid distinctions between sensations, thoughts and acts. The sensory stimulus is one thing, the central activity, standing for the idea, and the motor discharge, standing for the act proper, is a third. As a result, the reflex arc is not a comprehensive, or organic unity, but a patchwork of disjointed parts, a mechanical conjunction of unallied processes” (Dewey 1896, p. 358). From an interactional point of view, it is questionable whether one can draw a line between action and reaction, between which muscle contractions count as a passive being-moved and which are part of a (agentic) reaction.⁴

Gallagher has a stronger case when it comes to involuntary movements that are of a more passive nature. Someone could, for instance, take my hand and hit a third person with it.⁵ Apart from the struggle to get my hand out of her grip (for which I definitely experience a sense of agency), it could be argued that I do not have a sense of agency for the act of hitting. In the previous example, my falling is obviously not an act that I am willingly performing, but still: *I* am falling. In this example however, *I* am not hitting, I am not even moving my hand: on the contrary, I am *being moved*.

But do I have a sense of ownership for this movement? Is it still *my* movement when someone else uses a part of my body to do something? I would certainly deny that *I* was hitting this other person. In a sense, it is precisely *not* my movement. Or

⁴ Interestingly, this criticism is analogous to Gallagher’s criticism of simulation theory’s interpretation of mirror neurons. Gallagher challenges the idea that the mirror neuron system supports even a minimal definition of simulation, since this would rely on the assumption that it is possible to draw a strict line between the observation of an action and something that counts as simulation. “Even if it is possible to draw a line between activation of the visual cortex and activation of the pre-motor cortex, this does not mean that this line distinguishes, on either a functional or phenomenological level between perception and simulation as a step-wise process (...) rather than a temporally extended and enactive perceptual process” (Gallagher 2007a, p. 358). We argue that the same goes for the stimulus–response distinction: it does not follow from phenomenological analysis, it is at least question begging if we can distinguish them at the level of muscle contractions—let alone on the neuronal level.

⁵ Adjusted from an example given by Adrian J.T. Smith. This can be seen as the normal equivalent of the pathological case of the Anarchic Hand Syndrome that we will discuss in “Additional support for the SO/SA distinction? Pathologies and experiments.”

are we just fooled here by the misleading connotations of the term “ownership”?⁶ There is an obvious way in which I could deny ownership of the movement someone else makes with my hand: I do not experience it as my movement, I am not responsible for it and even feel distanced from it. The subjective feeling of mineness, of coinciding with my movement, is lacking. But there is also an obvious way in which it still *is* my movement. It is after all my hand that is moving and I am aware of that, from the inside so to speak.

A more gradual reading of SO could be helpful here. As we saw in “Different ways to make sense of agency and ownership,” we can find two interpretations of SO in Gallagher’s writings: one in terms of *mineness* and one in terms of *kinesthesia* or *proprioception*. When applied to our example, we could say that SO as the feeling of mineness is lacking, but SO as *kinesthesia*—as the proprioceptive awareness of being moved—is still present. In what follows, we will use the term *weak SO* to refer to this experience of *kinesthesia* and the term *strong SO* to refer to the experience of *kinesthesia plus* the subjective feeling of mineness. Only the experience of a strong SO entails that I identify, or rather coincide, with my movement. If I do not experience this mineness but rather feel alienated, there still remains this weak form of SO in the sense that these estranging experiences are happening *to me*. Arguably, the feeling of alienation itself rests on a weak SO being intact. One cannot *not* have a weak SO because it refers to the subjective character of all experiencing.⁷

Now in the example of counter-voluntary hitting, one could argue that I may not have the subjective feeling of mineness for the *act* of hitting, but it is surely still *my hand* that is being used here. But this entails a shift in reference, which brings us to another possible differentiation within SO. Apart from different *gradations in intensity*, SO is applied to *different domains* as well. In the literature, we can find a wide variety of SO usage: SO for movements, SO for the body as a whole (“body-ownership”), SO for a specific body part, and SO for thoughts. These forms of SO are often used interchangeably⁸, but we think this is questionable. The experience of

⁶ To own is a relational notion (x owns y) and as such it invites a dualistic reading of a subject “owning” her movements, thoughts, or her body, like she would own a car. But this is not the way in which SO is intended: when speaking of “mineness” (which they use synonymously with the sense of ownership), Gallagher and Zahavi (2008, p. 50) stress that we should not misinterpret this term as if there would be an I who owns his experiences as he would own an external object. It also should not be misunderstood as a contrastive determination, as if mineness would mean “not yours.” Mineness is a structural feature of experiences and as such fundamentally different from the ownership of objects.

The term “ownership” implicates a divergence between owner and owned that makes it in fact very unsuitable for describing the prereflective self-awareness that is addressed at the sense level. For at the prereflective sense level, there is precisely no division between the subject and her experiences: they rather coincide. Only at the level of *attribution* do we find such a divergence between a judging subject and her body that would allow for the use of a term like ownership. Whereas the sense level refers to the felt body, the body that I *am*, the attribution level refers to the body that I *have*. In other words, we could say that the sense level refers to the *body as subject* (lived body or “Leib”), while the level of attribution refers to the *body as object* (living body or “Körper”). It would be more adequate to use the term “ownership” for the attribution level only and to refer to the sense level as, for instance, the “sense of subjectivity.” However, since there are already so many notions in play in this debate, we decided not to add to the confusion and stick to the term SO.

⁷ Thanks to one of the anonymous reviewers for these suggestions.

⁸ See for instance Gallagher and Zahavi (2008): first, they define SO as a “sense of ownership for movement” (p. 160). A few pages later, however, the authors speak of SO in terms of “a sense of body-ownership” (p. 164) or just “body-ownership” as opposed to agency (p. 165).

ownership of a movement is likely to be phenomenologically different from the experience of ownership of a body part or even a thought. It is far from self-evident that the quality of SO stays the same regardless of its reference.

How should we understand these different notions of SO? We already suggested to explicate the minimal form of SO *for movements* in terms of kinesthesia. A weak sense of ownership *for the body as a whole* could refer to the prereflective awareness of my body which could be cashed out in terms of proprioception.⁹ It is less clear, however, what would be the equivalent of a weak SO *for a specific body part*. When we consider the body as a whole, such an implicit proprioceptive awareness makes sense, but to experience only a *local* implicit awareness seems contradictory. Because if I could experience an SO for a specific body part, this part would stand out against the tacit background of my body as a whole. It is hard to imagine that it would still be prereflective in this case. Whereas the SO for the body as a whole refers to the felt body, to the body as subject, the SO for a body part involves an attention to that specific part that rather refers to the body as object. Perhaps then, we should not speak of a sense of ownership for a specific body part, but only of an attribution of ownership. If this is the case, then a change of reference (from movement to body part) would implicate a shift in the level of description (from sense to attribution) as well.

Sensations

The examples discussed so far do allow for a distinction between SO and SA, but they first and foremost show a pervasive interaction between the two. Even when at first sight SA seems to be lacking, a closer look reveals that these experiences are still entangled in agency. But we might search for other experiences of a SO without any SA. An experience that would not entail an active reaction from my part, preferably.

A promising candidate would be *sensations*. After all, are they not purely passive? Take for instance the undergoing of a massage.¹⁰ Since one probably freely chooses to undergo a massage, a sense of agency for this choice and for the actions that follow from it is already present. Gallagher points out that the appropriate level of description of agency is this personal level, and this broader timeframe, rather than zooming in on “neurons, muscles, body parts, or even movements” (Gallagher 2006a, p. 121). However, if we want to find an agency-free experience at all, some zooming in will be inevitable.

If anything, a massage is meant for passive undergoing. The massaged person is just lying there, doing nothing but enjoying the sensation. Or feeling anxious. Or trying to relax. I can lie on the table of a physiotherapist, already tightened up in a resistant expectation of the painful experience that is sure to follow. On the other hand, I may happily look forward to being massaged: willing and able to surrender to it. Now is the resistance or surrender to a sensation still part of the passive undergoing, or are they rather acts in themselves? Perhaps it would be inappropriate

⁹ Proprioception and kinesthesia are often used synonymously. Because kinesthesia refers directly to movements, we think it most appropriate for this form of SO. Proprioception is of course itself dependent on movement—in that sense the distinction is somewhat arbitrary.

¹⁰ Thanks to one of the anonymous reviewers for suggesting this example.

to call them acts, but again it is doubtful whether we can cut out a slice of experience in which I am purely passively undergoing something—without any “response” or receptivity present. In fact, what the sensation feels like already depends on your attitude towards it. There is no sensation “an sich”: our expectations and anticipations shape the experience of the sensation. Even when zooming in, the passive undergoing might not be that passive after all.

To maintain that there would be no SA involved in experiencing these sensations, one would have to take a synchronic series of snapshots, leaving out the flow of experiencing, the situational context, and the developmental history. Furthermore, one would again need to insist on a crude stimulus–response model. A diachronic perspective, on the other hand, immediately reveals the embeddedness in agency, especially when we adopt an interactional concept of agency that is not confined to my self-initiated acts but encompasses receptivity as well.

Reflexes

Pure passivity is thus rare. In fact, when considering normal experiences, the only example of pure passivity and thus of a weak SO without any SA is *reflexes*. In cases like the knee-jerk and other tendon reflexes, my body unintendedly reacts to something. But instead of being moved by an outside force, my body moves of its own accord—be it as a reaction to an outside force. I do not experience a sense of agency for the movement of that lower leg, but it still is my lower leg and my movement as well.

So reflexes are experiences in which SA is lacking but SO is intact. Only in its very weakest form, that is, without the subjective feeling of mineness. Here, we find the same feeling of alienation as in the example of counter-voluntary hitting. My body is turned into a mechanistic functioning object that I recognize as my body, but which behavior is now alien to me.¹¹ I no longer coincide with these movements that my body (not me!) makes but watch them, perhaps with curiosity and perhaps even betrayal. In that respect, I no longer *am* my body, but *I have* a body that is beyond my control. Again, my being a body as subject (*Leib*) is replaced by my experience of my body as object (*Körper*). When intentionality is truly lacking, so is the feeling of mineness.

Does this show that the distinction between SO and SA makes sense after all? Reflexes at least prove that it is possible to separate a weak SO from SA. Some cautionary remarks need to be made here, however. We should first of all note the rarity of these cases. Admittedly, these reflexes are not pathological experiences, but we also do not experience them on a daily basis—let alone spontaneously. Reflexes are always triggered—which leads us to the same point that we just made with regard to the massage: from a broader perspective, agency is all over the place. My hand may twitch uncontrollably as a result of transcranial magnetic stimulation, but it was my own wish to participate in the experiment, eager to experience a lack of agency. Thirdly, even this weak SO is itself developmentally parasitic on agency: it would never have emerged if not out of previous interactions. Proprioception

¹¹ Perhaps bodily reflexes are as close as we can get to schizophrenic experiences of alien control. We might even report on these reflexes in a similar way: “It feels like someone else [the doctor] is moving my leg.”

develops through movements and interactions, so even at the most basic level SO is through and through interwoven with agency.

To sum up: in cases of *involuntary movement*, agency is not completely lacking. In the first example of falling, I experience both a strong SO (kinesthesia plus mineness) for the falling, plus an SA for adjusting and reacting. In the example of counter-voluntary hitting, I experience only a weak SO (kinesthesia without mineness) for the movements of my hand, plus a SA for my resistance. The objection that this SA is for the *reaction* only is based on an artificial separation of stimulus versus response. *Sensations* do not support a strict distinction between SO and SA either: again, we find that SA is not absent and that claims to the contrary depend on a crude stimulus–response model. The only case of (relatively) normal experiences that do lack a SA is *reflexes*. Reflexes are experiences of SO only and thus prove that it is possible to distinguish SO from SA. However, our discussion of the examples mainly reveals a pervasive interwovenness of SO and SA and suggests a strong interaction between the two. In the following sections, we will investigate the other examples that Gallagher presents in favor of an SO–SA distinction.

Unbidden thoughts

Just like movements, thoughts can be involuntary too. According to Gallagher, such unbidden thoughts show the same lack of agency and thus promote the distinction between SO and SA. Gallagher (2005, p. 181) cites Frankfurt (1976) who states that we sometimes experience thoughts that “strike us unexpectedly out of the blue; and thoughts that run willy-nilly through our heads.” One could think of a memory that keeps popping up or a melody that lingers in your head while you want to get rid of it. I know these are my thoughts and yet, Gallagher claims, I do not have a sense of agency for them, that is, I do not have the experience that I am the one who generated them. Unbidden thoughts lack an “intention to think” and are therefore “without a sense of agency” (Gallagher 2005, p. 181; see also Gallagher 2004, p. 9).

Now this seems to be a highly exaggerated claim. A lot of thoughts do come out of the blue, but at no point this actually leads me to doubt if it was really me who generated them (as is the case in schizophrenic experiences of thought insertion). In fact, we will *usually* not know precisely where our thoughts and images are coming from, nor do we know at what precise point in time they begin. But the willy-nillyness of these thoughts does certainly not limit my sense of being their author. Especially if we define the sense of agency as the sense of being the *source* of a movement, action, or thought, as Gallagher himself does (Gallagher 2000a, b, p. 204; 2005, p. 173); then, it is obvious that even unbidden thoughts do not lack this sense of agency at all. Having a sense of being the source of something does not entail knowing precisely where it is coming from. Although upcoming memories or melodies may be very annoying, I do have both a sense of ownership and a sense of agency for them.¹²

¹² The pathological extremity of unbidden thoughts would be the obsessive–compulsive disorder (OCD). Patients suffering from OCD know that their thoughts do not make sense or are even harmful, and they do not want to think them, but they cannot help thinking them anyway. Still, these thoughts are not only theirs in terms of SO, but they are also *thinking* these thoughts and they are the *source* of them. Compulsive thinking thus provides an interesting example of a SA for an involuntary action.

Gallagher actually does admit that “not only do they [unbidden thoughts] appear to be part of my stream of consciousness, but, despite the fact that I am not willing them, and may even be resisting them, they still seem to be generated within my own cognitive experience” (Gallagher 2005, p. 194). This would be the difference between unbidden thoughts and inserted thoughts. But if those thoughts seem to be “generated within my own cognitive experience” that already reveals that the sense of agency is still firmly in place here. For the sense level, it is enough that they *seem* to be generated by me. In fact, we think that the difference between unbidden and inserted thoughts is precisely that the latter are only *happening* in my stream of consciousness, that is, without any experience of *generating* them.

One could still object that I do not *will* these particular thoughts and that I have not willfully generated them. As Gallagher writes: “in the case of involuntary cognitive processes, I may acknowledge that I am the one who is thinking, but claim that the thoughts are not *willfully generated* by me” (Gallagher 2005, p. 174, emphasis ours).¹³ This is in fact a stronger notion of SA than the description of SA in terms of being the *source* of a movement or thought: the thought should not just be coming from me but should on top of that be deliberately generated. Just like we did in the case of ownership, we could easily give a gradual reading of these different notions of SA that Gallagher uses interchangeably.¹⁴ So even if a *weak SA* is still present in the case of unbidden thoughts, Gallagher might claim that a *strong SA* is lacking.

In principle, we would welcome such a gradual explanation—also because it makes clear that unbidden thoughts are no proof for a strict SO–SA distinction either. However, in this case, we doubt whether we ever experience a strong SA in terms of willful generation for thinking. When applied to *movements*, SA as willful generation makes sense. But when SA refers to *thinking*, such a description does not seem to be phenomenologically warranted. The default mode in thinking is precisely not an explicit and willful generation of thoughts. Analog to Heidegger’s (1927) famous description of when tools turn into objects, we could argue that we only resort to deliberation if our normal, spontaneous thinking falls short. Furthermore, even if we do decide to explicitly think something through, this deliberative thinking is *still* not a willful generation of thoughts. I am not volitionally producing my thoughts, but it is rather a kind of concentration, a funnel to direct the upcoming thoughts in a certain direction.¹⁵ Or, as Roessler (2001) puts it: “a thinking may (...) be a deliberate action, say, the activity of trying to recall a name. The event of the right name ‘coming to mind’, though, is not itself an action” (p. 180).

Given Gallagher’s commitment to a bottom-up explanation of ownership and agency that starts from first-order phenomenology, we assume that he probably would not want to argue that SA requires conscious deliberation. Especially when

¹³ This quote also makes clear that Gallagher addresses ownership and agency at the level of *attribution* instead of experience, since he speaks of an “acknowledgment of ownership” and a “claim” about agency. As long as we cannot be sure of a perfect congruency between the two levels, we should not infer a distinction on the sense level only on the basis of a distinction at the level of attribution.

¹⁴ Gallagher himself already distinguishes the SA linked to bodily movement (what we labeled SA^m) from the SA that is linked to the intentional aspect of a task or goal (“SAⁱ”). We will criticize this distinction in “The phenomenology of agency and ownership” and argue that some intentionality is *always* present in movement, so that one cannot have SA^m without SAⁱ.

¹⁵ Thanks to Thomas Fuchs for this image and for pointing out the stronger claim that even deliberative thinking should not be characterized as the willful generation of thoughts.

we consider his convincing objections to Frith's (Frith 1992) claim that "thinking, like all our actions, is normally accompanied by a sense of effort and deliberate choice as we move from one thought to the next" (p. 81) and his arguments against the motor model of cognition in general (Gallagher 2004, 2005). However, by taking recourse to a notion of agency as the experience of willfully generated action, Gallagher runs the risk of facing the same lurking infinite regress that threatens Frith's motor model.

We argued in the previous section that, in most cases of involuntary movements, SA is not completely lacking. The examples of unbidden thoughts reviewed in this section suggest that SA is still present here as well. Thus, instead of supporting a strict distinction between SO and SA, our ordinary experience reveals that in general they are intimately intertwined.

Schizophrenic experiences

As we have seen, most ordinary life examples do not convincingly demonstrate a distinction between a sense of agency and a sense of ownership. Another important and widely discussed set of examples concerns psychopathological disruptions, in particular schizophrenic experiences. Gallagher (2005, 2007b) argues that we can understand schizophrenic experiences such as delusions of control and thought insertion as a loss of the sense of agency, while the sense of ownership remains unimpaired. As he points out: "schizophrenics who suffer from these symptoms acknowledge that they are the ones that are moving, that the movements are happening to their own body, or that thoughts are happening in their own stream of consciousness, but they claim that they are not the agents of these movements or thoughts—when in fact they do cause the movement or thought" (Gallagher 2007b, p. 36).

Schizophrenic patients may indeed report experiences such as a loss of natural movement (the body becomes a "machine" that needs to be "steered" (de Haan and Fuchs, forthcoming)), their body moving on its own account, or alien thoughts that are in one way or another inserted in their heads. These experiences clearly lack the sense of agency that is so characteristic as to go unnoticed in "normal" everyday life. But can we say that they still involve a sense of ownership?

First of all, it should be clear that while it is true that schizophrenic patients report a lack of a sense of agency, they report a lack of a sense of ownership as well. In fact, the hallmark of both inserted thoughts and delusions of control is that they do *not* feel as the patient's own thoughts and movements. In the words of patient S.F. (unpublished interview):

It felt different from my normal thinking. A bit like a lightning flash in my brain. Like a white light in my head, exactly. It was a heavier thought, with more substance.

Other patient reports also affirm a loss of a sense of ownership, as for instance in the following passage in Spence et al. (1997):

One man said that thoughts were being put into his mind and that they 'felt different' from his own; another said that the television and radio were

responsible for different thoughts, which were ‘tampered with electrically’ and always felt the same way (i.e. recognisably different from his ‘own’).

An early description in Jaspers (1963) cites a schizophrenic patient who describes inserted thoughts as:

com[ing] at any moment like a gift (...) I do not dare to impart them as if they were my own (Gruhle, in Jaspers 1963).

In these cases, the sense of ownership is clearly lacking, as is the sense of agency. Unlike unbidden thoughts, which are generally attributed to the self and, in our opinion, also experienced as such, inserted thoughts and delusions of control are not only denied to be self-generated but are sometimes even attributed to an alien source. Consider the following, often cited, passage:

Thoughts are put into my mind like “Kill God”. It’s just like my mind working, but it isn’t. They come from this chap, Chris. They’re his thoughts. (Frith 1992, p. 66).

Gallagher would probably argue that, in this case, there is a lack of a sense of agency because the thought “Kill God” is caused by someone else (Chris). On his account, the schizophrenic patient still demonstrates to have a sense of ownership because he would *acknowledge* that the thoughts are put in his *own mind*.

However, we would like to make two important remarks here. The first one concerns the fact that the “acknowledgement,” as Gallagher rightly calls it, is an *attribution* rather than a *sense* of ownership. First-onset schizophrenic patients often report that although they *know* that it is their body that is moving and *realize* that it must be their thought—after all, it is going on in their mind!—the utterly disturbing experience is that it just does not *feel* that way. A young schizophrenic patient repeatedly explained, for example, that his experiences led him to believe in things that he knew were impossible (such as that his body and face had changed, that other people could read his thoughts, and that he could influence the traffic).

I was just about to believe that something had really changed [in my body]. Because when it feels like that so often, you are really about to believe it (...) I knew that nothing had changed, but I did suspect that it could still be the case. (unpublished interview.)

Another first-onset patient describes how he feels as if he is at two different places at the same time and then adds: “I know it cannot be true. That would be nuts. But I *feel* that way.” These patients thus report a disturbing discrepancy between what they feel and what they know: the experience at the sense level and the knowledge at the attribution level run contrary to each other.¹⁶ Thus, although they

¹⁶ Here, we also witness a difference between first-onset and chronic schizophrenic patients: repeated experiences of rationally unjustifiable phenomena apparently lead to favoring the experiences above the reason that denies their realness. In prodromal or early schizophrenia, people often speak of “as if” experiences: it is “as if” my girlfriend can read my thoughts, it is “as if” I am from another planet. Their experience has changed but they still resist to believe what their experience suggests (see also Parnas 2003, p. 219).

might feel compelled to make an *attribution* of ownership, this does not guarantee an according *sense* of ownership at all.¹⁷

Gallagher might object that we cannot neglect the fact that schizophrenics admit that inserted thoughts occur in their *own* mind. This leads us to the second point that needs to be addressed (besides the mix-up of experience and attribution): namely the tendency to change the explanandum when talking about agency and ownership. Indeed, these alien thoughts do occur in their own mind, but one cannot equate the two. In fact, this objection demonstrates that Gallagher established the intactness of SO by subtly changing the target explanandum from “thought” to “mind.” If we however insist on keeping the target explanandum the same—i.e., if we keep focusing on the inserted thought itself—it is easy to see that both SA and SO *for the thought* are distorted. They are precisely not “his thoughts.” The various quotations above make abundantly clear that the disturbance of the sense of ownership is in fact central to the experience of thought insertion.

For the sake of the argument, let us assume that it is indeed important to shift the explanandum from “thought” to “mind.” Does this really solve the problem? No. Even if we find that, when referring to “mind,” the schizophrenics’ sense of ownership is still intact, we have no reason to doubt that their sense of agency for “mind” is still intact as well. Thus, what these descriptions of thought insertion show is that, at the level of experience, there is a lack of both SA and SO for “thought.” If we choose to move from the thought to the mind, then we might conclude that SA and SO are still intact. But considering the inserted thought, schizophrenic patients can at most come up with an *attribution* of agency and ownership.

Interestingly, here, we witness a change of explanandum that seems to be slightly different from the one we discussed in the example of counter-voluntary hitting. There, we observed a shift from a sense of ownership for an experience (my movement) to a sense of ownership for an object (my hand). What is typical in the case of thought insertion is that schizophrenic patients report *thoughts* that are alien to them, instead of reporting that this *thinking* does not belong to them. In an important sense, they are not *thinking* these thoughts; they are rather the sites of their occurrence. As Roessler (2001, p. 179) puts it: “we might provisionally say [that the patient] ‘experiences’ someone else’s thoughts.” Such a difference between *experiencing a thought* and *thinking* could account for the different levels at which SO and SA are lacking and at which they are still intact.

What is different here is that the change of explanandum is *mereological*: from a single thought to a thought-encompassing mind. In other words, we move from parts (thoughts) to wholes (minds), from local to global. This is important because it allows schizophrenic patients to distinguish between the inserted thoughts and their own thoughts, both occurring in their mind. As Gallagher points out, one of the challenges in understanding thought insertion is precisely that not all thoughts feel foreign. Specific movements and thoughts are experienced as alien, but not everything and always. As long as the patients have a SO and a SA on the *global*

¹⁷ Notice that there is a difference between the claim that attributions of ownership and agency are dependent on the sense of ownership and agency and the stronger claim that this dependency relationship is necessarily one of isomorphism. We agree with the first claim but not with the second.

level, this serves as the basis for their discrimination of own and alien thoughts at the *local* level. In other words, the SO and SA for their stream of consciousness (e.g., thinking) and their mind allow them to distinguish between their own thinking and alien thoughts that “occur” in their mind.¹⁸

The well-known example that Mellor (1970) gives supports this idea:

I look out of the window and I think the garden looks nice and the grass looks cool, but the thoughts of Eamonn Andrews come into my mind. There are no other thoughts there, only his... He treats my mind like a screen and flashes his thoughts onto it like you flash a picture.

This again shows that SA and SO are only impaired with regard to the *specific thoughts* of Eamonn Andrews. The patient himself is actually thinking about the garden and the cool grass, and we have no reason to doubt that he experiences these thoughts as his own; both in terms of SA and SO. With regard to the specific thoughts inserted by Eamonn Andrews, however, we can conclude that both SO and SA are impaired. Thus, the relevant distinction here is between specific inserted thoughts that lack both SA and SO and between the schizophrenic’s own thinking, in which SA and SO are both intact.

The question would still be if the schizophrenic experience of alienation does not depend on the presence of at least a weak SO—as in the case of reflexes. In fact, that is exactly what Gallagher claims: “some sense of ownership is still retained, *and that is the basis of their complaint*” (Gallagher 2000b, p. 230, our emphasis). Although we agree that alienation is only possible on the basis of some experience of mineness, we would argue that the SO (and SA) that are still retained and that serve as this basis are for the patients’ *other thoughts* and their mind in general. *For the inserted thought*, even a weak SO is lacking.¹⁹

To recapitulate: in this section, we have tried to show that an appeal to schizophrenic experiences of thought insertion does not support the distinction between SA and SO because (1) it involves a change of levels (from experience to attribution) and (2) it also changes the explanandum from singular thoughts (that are inserted) to minds (that contain both inserted and own thoughts). In fact, cases of thought insertion rather demonstrate that when the sense of agency for a thought is lost, so is the sense of mineness. All that is left is just an *attribution* of ownership, a reflective acknowledgement rather than a felt sense. This supports our more general point that SA and SO are intimately intertwined, whether they concern movement, actions, or thoughts. Moreover, our analysis also suggests that

¹⁸ Of course, the two are not independent, so continuous experience of a lack of SO and SA for specific thoughts (local) will on the long run probably comprise SO and SA for their stream of consciousness in general. We would have to compare the experiences of first-onset and chronic schizophrenic patients in this respect.

¹⁹ Parnas and Sass (2001) propose to understand schizophrenia as a self or “ipseity” disorder. They point to the altered *structure* of experiencing, so that even the subjective character of experiencing becomes distorted. Of course, this is closely related to disturbances in the sense of agency (“sense of subjective mastery”), but it just as well affects the feeling of what they call “myness.” Considering early-phase alterations in the stream of consciousness, they write: “mental content becomes quasi-autonomous, bereft of its natural dimension of myness” (Parnas and Sass 2001, p. 107).

we should not be too quick in labeling thought insertion as mainly a problem of the sense of agency.

Additional support for the SO/SA distinction? Pathologies and experiments

So far, in our discussion of the evidence for a strict distinction between SO and SA, we have limited ourselves to cases of involuntary movement, unbidden thoughts, and schizophrenic thought insertions. Although these phenomena allow us to make distinctions between SO and SA, we have tried to show that they also reveal an intricate interplay between the two of them. In our everyday phenomenology, this interplay is perfected up to such a level that we cannot even discern between them. But there is certainly more to say about the *pathology* of agency and ownership (besides what we already mentioned in the previous sections) that might help us to explicate their relationship. Moreover, we also briefly discuss some of the experimental studies in the area of neurobiology that have claimed to “prove” the SO/SA distinction.

Let us start with a set of examples from pathology that are in line with the ones reviewed in the previous sections insofar as they seem to deal primarily with a distortion of SA. Probably the most notorious member of this class is the Anarchic Hand Syndrome (AHS), a neurological disorder in which the patient suffers from an “anarchic hand”—a hand with the capability of acting autonomously as if it has “a will of its own.” It is often suggested that patients with AHS report a loss of the SA associated with a purposeful movement of their hand but still experience a SO for it. Gallagher also claims that “although the patient is kinesthetically aware of the movements of the hand and although the hand itself is felt as the patient’s own, the movements it performs are explicitly disavowed by the patient” (Gallagher and Zahavi 2008, p. 160). We think that Gallagher is right in concluding that AHS patients still experience a weak SO, and also that this weak SO has to be understood in terms of a kinesthetic awareness of movement. However, in line with our assumption that SO and SA modulate each other, we would expect that the loss of SA for the anarchic hand does impair the feeling of mineness. These patients probably experience only a weak and not a strong SO for their anarchic hand (see also our discussion of counter-voluntary hitting in “Involuntary movements”).

Implicitly, Gallagher seems to recognize this since he also considers AHS to be the kind of disorders in which “the sense of ownership for one’s body does in fact go missing or becomes confused” (Gallagher and Zahavi 2008, p. 212). He puts AHS in the same category as cases of unilateral neglect where stroke patients totally ignore one side of their bodies, claiming that it is no longer theirs and even belongs to someone else. What goes missing in these cases, according to Gallagher, is not so much SO in terms of proprioception (weak SO) but rather the SO as a stronger feeling of mineness. As a result, patients start to misidentify themselves at the level of attribution. However, “the misidentification...is made in regard to the body ‘as object’. That is, the arm is no longer part of the patient’s lived body, and they treat it as an object with which they do not identify” (Gallagher and Zahavi 2008, p. 212). Gallagher goes on to notice that “this also applies to the sense of ownership that we may have for a rubber hand in certain experimental situations...In this case, too, *the*

attribution of ownership is ‘as object’ and based on vision, and not ‘as subject’” (Gallagher and Zahavi 2008, p. 214, footnote 6, emphasis ours).²⁰ Thus, despite the fact that Gallagher often presents us with a picture in which there is an asymmetry between SO and SA, in the sense that the former is more basic and “stable” than the latter, in other places, he admits that SO can become seriously disrupted as well. However, he seems to think that these disruptions do not apply to the sense of ownership when defined as proprioception.

It might be helpful to consider other (neurobiological) evidence from pathology here. Lesion studies, for instance, show that it is very well possible to mess with this weak sense of ownership. It is widely recognized that lesions of the inferior parietal cortex can be responsible for disturbances of ownership. Farrer et al. (2003, p. 329), for example, claim that “lesions of the inferior parietal cortex, especially on the right side, have been associated with delusions about the patient’s limb that may be perceived as an alien object or as belonging to another person,” and Farrer and Frith (2002, p. 601) also conclude that “patients with right parietal lesion do not recognize their limbs as their own and perceive them as belonging to others.”

Just like the reports from schizophrenic patients about a loss of SO in case of thought insertion, we think that the reports of patients with right parietal lesion should be taken “at face value” as well and treated as reliable indicators for disturbances in SO. We would agree with Gallagher that SO in its strong sense of the feeling of mineness is certainly lacking. But the question is whether there is still a weak SO left here and, if so, what kind of SO. If no proprioception whatsoever is present, then weak SO is by definition absent too. In those cases where proprioception is not completely lacking, one could argue that there still is a weak SO *for the specific body part itself*. However, the problem with this assumption is that it requires us to explain why patients who still *have* a SO for the relevant body part *report* a lack of it, or even go as far as to ascribe their sensations to someone else. Therefore, we suggest that what is still intact is only a weak SO for those parts of the body that still function properly, that is, for the *body as a whole* (minus the affected limb). The advantage of this view is that it allows us to take patients’ reports about their experiences seriously. Moreover, it makes sense to say that it is precisely because of the *distortion* of the SO for that specific body part that it comes to stand out against the more global SO that is characteristic for the body as a whole. The global SO that is still intact probably serves as the basis on which patients start to objectify a specific body part.

Regardless of how we answer this question, however, the kind of findings mentioned so far do show that in most of these cases SA and SO are very much interwoven and that distortions of SA often have implications for SO and vice versa. This is supported by other research as well, for example on the neurological syndrome of anosognosia for hemiplegia (AHP). A recent study by Baier and Karnath (2008) reported that 92% of the AHP patients with a disturbed awareness for their motor weakness (SA) also show an additional “disturbed sensation of limb ownership” for the paretic/plegic limb.

²⁰ Gallagher’s use of “attribution of ownership” instead of sense here is in line with the suggestion we made in “[Involuntary movements, sensations, and reflexes](#)” that SO for a specific body part may in fact be an attribution rather than a sense.

The distinction between SO and SA has also triggered a lot of experimental research. Most of these experiments rely on the logic of involuntary movement. As Gallagher points out: “since in the case of involuntary movement there is a sense of ownership and no sense of self-agency, and because my awareness of my involuntary movement comes from afferent sensory-feedback (visual and proprioceptive/kinaesthetic information that tells me that I’m moving, but not from motor commands issued to generate the movement (so, no efference signals)), it seems natural to suggest that in ordinary voluntary movement the sense of ownership might be generated by sensory feedback, and the sense of agency might be generated by efferent signals that send motor commands to the muscle system” (Gallagher and Zahavi 2008, p. 163) Interestingly enough, this quote clearly shows that the experiments under consideration mainly deal with a very weak interpretation of SO in terms of proprioception. This focus is understandable from the wish to separate SO from SA (as we will suggest in the next section, the strong SO already entails agentic elements and is thus not suited for this purpose), but in order to better understand both pathological cases and ordinary experience, it would be interesting to test stronger forms of SO as well. Moreover, if it is indeed the case that SA and SO modulate each other, one could test how and to what extent the *intensity* of SA and SO plays a role here.

Unfortunately, it is not always clear from these experiments what in fact has been measured. As Gallagher points out (Gallagher and Zahavi 2008), a closer reading of them regularly raises a lot of troubling questions in the sense that experimenters sometimes seem confused about what they are testing. Different experimenters use different concepts of both SA and SO as well as diverging experimental translations (see Tsakiris and Haggard (2005) for a critical overview). Moreover, the neural correlates of the sense of agency claimed by one group of researchers sometimes come up as the neural correlates of the sense of ownership in another study—something which is probably due to differences in experimental designs (Tsakiris et al. 2007, p. 647).

Another problem with all these studies is that although they make claims about the *sense* of ownership and the *sense* of agency, they omit to investigate first-person reports from the participants, which makes their claims highly problematic. A recent study by Longo et al. (2008) has been the first to combine experiments on the inescapable rubber hand with a structured survey of introspective reports from the participants. They postulated three subcomponents of the experience of the illusion: apart from ownership and agency, they added “location” as a further component. They found that the SO during the illusion “does not necessarily cause a corresponding positive sense of agency.” This would suggest that SO and SA are “dissociable aspects of experience” (Longo et al. 2008, p. 990). However, as the authors note, the fact that no SA emerged was to be expected from the setup of the experiment because no movement was involved. From their results, they conclude: “*ownership and location along with the sense of agency grouped together in the omnibus PCA [Principle Components Analysis], suggesting that these three components of embodiment, while dissociable in a focused analysis, form a coherent cluster of experience. This experiential link between the senses of ownership and agency belies the traditional view that these are distinct*” (Longo et al. 2008, p. 995, emphasis ours). Thus, although these findings point to the possibility of discriminating between SO and SA, they reveal the intimate connection between them as well.

Although the above experiments are interesting and definitely have the potential to shed some new light on the SA/SO distinction and, importantly, their interaction, we think that one should be extremely careful in interpreting the results. As Gallagher himself remarks, all these experiments start from a certain phenomenology of ownership and agency (what he calls “front-loading”), and we think it is very important to get this phenomenology right. The fact that the experiments show that there are different neural correlates for the “ownership” and “agency” conditions they use does not by itself prove that these conditions do in fact reflect what we mean by SO and SA. For the question still remains how these “ownership” and “agency” conditions are defined and whether they are representative for our daily phenomenology of agency and ownership. Forcing a distinction upon our phenomenology is definitely not the way front-loading is meant to be.

The phenomenology of agency and ownership

So far, we have pointed to the multiple ways to understand and apply the notions of SO and SA. As we have seen, there are at least four different references: movements, the body as a whole, body parts, and thoughts. For both SO and SA, we suggested that these different domains correspond to differences in phenomenology as well. Furthermore, departing from Gallagher’s own distinctions between SO as proprioception and as mineness and between SA^m and SAⁱ, we suggested that both SO and SA come in gradations of intensity.

What our discussion of the various cases put forward by Gallagher (and also the other phenomena and experiments we have discussed) has shown is that most forms of SO already come clothed in SA, with *reflexes* as the notable exception (see Table 2). We think that this invites a gradual reading of the distinction between SO and SA rather than a categorical distinction between the two.

At this point, we want to address a possible objection to such a gradual approach. Do the gradations in mineness not rather reflect the presence or absence of a sense of agency? In other words: does our notion of a “strong SO” not actually refer to SA?

What all my experiences have in common is the quality of mineness. At the same time, however, some of my experiences seem to be “more mine” than others. Bodily processes such as breathing and sweating, the passive absorption of impressions, in other words, “mere movements”—those are undeniably my experiences. But if we compare those to experiences such as playing tennis, thinking, and reading, we are

Table 2 SO for movement

“Passive undergoing” of a movement			Active movement, <i>strong SO and SA included</i>
Outside of my agency (reflex), <i>weak SO only</i>	Incongruent with my agency (e.g., falling), <i>strong SO and SA included</i>	Congruent with my agency (e.g., massage), <i>weak SO and SA included</i>	

inclined to say that these are in a sense “even more mine.” The difference seems to lie in the fact that I brought them about and that these experiences are *generated* by me and not just “passively consumed.” In other words, the difference seems to lie in the absence or presence of agency.

Following this line of thought, it is tempting to say that, whereas I am the subject of all my experiences, I am only the agent of those experiences that *I caused*. This intuition might very well be the underlying motivation for Gallagher’s SO/SA distinction: being the subject of one’s experiences (the one who “undergoes” them) should then be identified with SO and being the agent’s of one’s experiences (the willful generator of the action) with SA. Since agentic experiences are just a subset of all of my experiences, this clarifies why it is attractive to claim that there is an asymmetry between SO and SA in which SO is more fundamental than SA.²¹

The distinction between SA and SO thus seems to reflect a distinction between agency-inspired actions and mere bodily movements.²² The bottom line question is whether it is necessary to make such a distinction. We think this is neither necessary nor desirable. In the previous sections, we have mainly tried to show that SO is a gradual phenomenon that in all but its very weakest form already includes some element of agency. If we were correct in identifying the intentionality involved in even very “passive” experiences, this renders it doubtful whether there are, phenomenologically speaking, actually such things as mere bodily movements.

A large part of our everyday movements and actions are indeed not volitionally or deliberately steered, but this should not fool us into categorizing them as “mere movements.” Rather, they exhibit an incorporated intentionality in the most literal sense—in reference to Merleau-Ponty’s (1968) notion of “flesh,” we could call this an *intentionality in the flesh*. Even bodily processes that are largely unintentional, such as heart rate, breathing, sweating, etc. can become the object of intentional steering. Furthermore, some bodily processes and movements that we consider to be unintentional and automatic are in fact *learned* and once required our attention. As William James (1890, p. 496) said: “It is a general principle in psychology that consciousness deserts all processes where it can no longer be of use.” The fact that these processes no longer require our attention does not mean that they have become mere movements. The tacit character of these processes can easily lead us to forget their intentional roots.

We would thus agree that a strong SO always already includes some element of agency. We would even expect that the amount of agency involved is one of the key components in determining the strength of this feeling of mineness, since we think

²¹ The intuition to single out actions as a special subset of our experiences is closely related to the notion of accountability: one is responsible for one’s action, but not for what one merely undergoes. So there is a moral motivation for this distinction as well. Thanks to Marc Slors for pointing this out to us.

²² Interestingly, Gallagher’s distinction between SA^m as “first-order experience linked to bodily movement” and SAⁱ as “first-order experience linked to the intentional aspect of a task, goal, etc.” (Gallagher and Zahavi 2008, p. 166) reveals a similar inclination to distinguish between bodily movement and intentional action. Here, bodily movements are at least bestowed with a minimal form of agency. But it still encourages the creation of a gap at the experiential level between bodily movements, devoid of any intentionality, and actions that are fully agentic.

that SA modulates SO.²³ But we are still talking about the experience of “mineness” here, and to claim that this “actually” is SA would be a retrospective projection of the distinction onto our experience.

And even though Gallagher’s dissociation of SO and SA might be traced back to a distinction between mere movements and actions, we believe that in general his own work rather speaks against such a distinction too. In *How the body shapes the mind*, Gallagher (2005) provides ample evidence against the Cartesian caricature of the body as a passive automaton. On the basis of a wide range of empirical research, he makes a strong case for recognizing the bodily share in phenomena that have traditionally been interpreted as work of the mind and convincingly shows the inextricable intertwinement of body and mind.

We want to conclude by proposing a first sketch of a broader interactive conception of agency—one that blurs the distinction between SO and SA (and thus also resists the temptation to privilege SO) and goes beyond the distinction between SA^m and SAⁱ as well. Although we agree that there are differences in the intensity of the intentionality involved, we challenge the assumption of an intentionality-free sense of agency as SA^m. We would think that it is precisely the intentionality that makes out the agentic nature. If we presuppose some form of intentionality, we can still discern gradations within SA depending on how deliberative the intentionality is. In the traditional, very strong conception, agency refers to the initiation of a priory-intended action. If we leave out the prior intention, we get the weaker definition of agency in terms of being the “source” of a movement or thought. We would like to go a step further and suggest that the SA can also be present in the form of a potential capacity, as a Husserlian “I can.” My sense of agency increases the more I actualize these potentialities.

Instead of understanding agency as a one-way-directed imposition of my self-initiated will on the environment (i.e., SAⁱ), we propose to conceive of agency as a *relational* capacity: resulting from our interactions with the environment and other agents. Agency refers to my capability to participate in the world, to interact with it

²³ A nice illustration of how SA modulates SO is the use of tools. Merleau-Ponty (2002/1945) gives the famous example of the blind man whose stick is *incorporated*, as if it were a part of him: “it [the stick] is a bodily auxiliary, an extension of the bodily synthesis” (p. 135). This suggests that we can have a strong SO for tools—and perhaps a weak SO as well: there is after all proprioceptive feedback coming from the handling of the stick. As Fuchs and De Jaegher (2009) point out: the blind man does not feel the pressure of the stick against his fingers; he rather feels the tip of the stick. It is important to note here that it is the *active use* that most strongly effects the incorporation and the feeling of mineness. Insofar as we use it, any tool can in principle become incorporated. Incorporation on the basis of perception alone is also possible (in fact, the whole enterprise of rubber hand experiments rests on this possibility), but in that case there are some extra requirements that need to be met (arguably, the object should minimally resemble the body part for instance and be in a congruent position (cf. Tsakiris et al. 2007)). Moreover, Tsakiris et al. (2006) have shown that even the rubber hand illusion increases when one introduces movement.

Not only does agentic use promote the SO, we also find that the reverse holds true: that a *lack* of agency diminishes the sense of mineness. In his book *A leg to stand on*, Oliver Sacks for instance describes how he breaks his leg and subsequently fails to recognize it as his own: “In that instant, that very first encounter, I knew not my leg. It was utterly strange, not-mine, unfamiliar. I gazed upon it with absolute non-recognition (...) The more I gazed at that cylinder of chalk, the more alien and incomprehensible it appeared to me. I could no longer feel it as mine, as part of me. It seemed to bear no relation whatever to me. It was absolutely not-me—and yet, impossibly, it was attached to me—and even more impossibly, continuous with me.” Oliver Sacks (1991, p. 47).

and with other people. As such, agency involves adjustment and receptivity as much as initiation. Participation is a two-way dynamics: it implies a constant modulation between acting and reacting and between forming and being formed, *to such an extent that an easy divide between passive versus active and between internal versus external becomes impossible*. This also implies that it would be artificial to draw a sharp line between what is an action and what is a reaction—not only at the microlevel of bodily movements but also from a broader, developmental perspective: as thoroughly social creatures, even our innermost intentions are not internal fabrications but are rather *inspired by interactions* with other people and our surroundings. Agency does not occur in a vacuum.

We think that such a proposal is actually very much in line with most of Gallagher's own work as well. Gallagher also corrects and amends the traditional notion of agency by (1) enlarging its scope so as to make it include the prereflective dimension, in the sense that actions are not solely those movements volitionally or deliberately planned and executed; (2) stressing the importance of the temporal dimension and paying attention to history and context (Gallagher 2005, p. 238); and (3) cautioning us to use the appropriate level of description: by zooming in on “neurons, muscles, body parts, or even movements,” we are not explaining intentional action, which is best described on a personal level, and in relation to a personal history (Gallagher 2006b, p. 121).

The idea of an autonomous subject putting a stamp on the world is a distorted image anyway—just as distorted as the idea of the passive, undergoing role of the body. Dewey (1917) aptly commented on the artificial distinction between agentic action and passive undergoing when he said that: “Undergoing (...) is never mere passivity. The most patient patient is more than a receptor. He is also an agent a reactor, one trying experiments, one concerned with undergoing in a way which may influence what is still to happen. Sheer endurance, side-stepping evasions, are, after all, ways of treating the environment with a view to what such treatment will accomplish. Even if we shut ourselves up in the most clamlike fashion, we are doing something; our passivity is an active attitude, not an extinction of response. Just as there is no assertive action, no aggressive attack upon things as they are, which is all action, so there is no undergoing which is not on our part also a going on and a going through. Experience, in other words, is a matter of simultaneous doings and sufferings.”

Instead of two separate, categorical modalities of experience, we might rather appreciate the differences between volitional actions and habitual body movements as poles on one axis of more or less deliberate intentionality. Such an interactive understanding of agency and ownership enables us to perceive various blends of SO and SA and is thus phenomenologically more adequate. Besides, it offers a view on the minimal self that is less dualistic and thus even more minimal.

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